

Arthropoda Associated with a Nest of the Hawaiian Crow

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While doing ecological studies of the Hawaiian Crow (*Corvus tropicus* Gmelin) I had occasion to sample the arthropods associated with a nest. The identifications of these were done by Drs. E.W. Baker, D.R. Smith, D.M. Weisman, L.H. Herman, E.L. Mockford, D.L. Wray and A.B. Gurney of the U.S. Department of Agriculture, Insect Identification and Parasite Introduction Research Branch, Washington, D.C. Dr. D.E. Hardy of the University of Hawaii assisted with preparation of the manuscript. I appreciate these aids.

The Hawaiian crow occupies a restricted range on the island of Hawaii, in upland forests from the region of Puuwaawaa southward possibly to the Kau District. A nest found under construction on March 26, 1964, in the Puuanahulu Game Management Area, near Puuwaawaa, was observed periodically until April 26 (P.Q. Tomich, *unpublished data*). The site was in an open mixed forest at 2300 ft elevation, and the bulky stick nest lined mainly with blades and stems of grasses, rested 27 ft above ground at the divergence of 3 stout limbs in the crown of an ohia tree (*Metrosideros*). At least 4 eggs were broken during the incubation period, and the remaining 1 was found infertile when the crows were abandoning the nest on April 26. The nest was then collected and processed in a modified Berlese funnel.

The rich medium provided by the combined egg contents, plant materials of the nest cup, and lesser products residual from the crows feeding in the nest or sloughed from their bodies and plumage, was attractive to a variety of insects and mites. In the approximately 21 days that elapsed between completion of the nest and its collection, at least 11 genera of arthropods had come to use it for foraging, for temporary refuge, or for rearing of young.

Listing of species taken, with notes concerning their probable association in the nest:

ARACHNIDA

ACARINA

Dermanyssidae

Ornithonyssus bursa (Berlese), nest-inhabiting parasitic mites. On host only for feeding.

Blattisociidae

Blattisocius tarsalis (Berlese), a predator on other mites.

Acaridae

Tyrophagus putrescentiae (Schränk), a saprophyte apparently associated with fungi on decaying materials in nest.

INSECTA
COLLEMBOLA

Entomobryidae

Entomobrya multifasciata Tullberg, a saprophyte apparently associated with fungi and organic detritus in the nest.

ORTHOPTERA

Blattidae

Diploptera punctata (Esch.), the cypress cockroach. Feeds on bark and fruits of numerous plants. Probably using the nest as a shelter.

Onchostylus notulatus (Stål), probably feeding on detritus in nest.

PSOCOPTERA

Eupsocida

a saprophyte apparently associated with fungi and organic detritus in the nest.

LEPIDOPTERA

Tineidae

Opegona sp., "These have been taken from a wide variety of dead and decaying plant material" (note by D.M. Weisman). Genus and sp.? (Probably *Tinea* or *Tineola* sp.). "These are probably associated with animal products, such as feathers, etc." (note by D.M. Weisman).

COLEOPTERA

Staphylinidae

Aleocharinae genus? a predator on other arthropods in the nest.

HYMENOPTERA

Formicidae

Pheidole megacephala (Fabr.), a predator on other arthropods in the nest.